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Case report

# Duodenal webs – no age limit

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*Background*

Duodenal webs usually give rise to symptoms of gastric outlet obstruction in infancy, but they occasionally present in adulthood.

*Case outline*

We report an 82-year-old woman with an unusual cause of gastric outlet obstruction. Peptic ulcer stricture or carcinoma were suspected, but a CT scan and upper gastrointestinal endoscopy revealed that her symptoms were the result of duodenal webs. The webs were successfully dilated at endosocpy.

*Discussion*

Duodenal webs may rarely account for gastric outlet obstruction in adults. Failure to visualise the second and third parts of the duodenum at endoscopy means that the diagnosis may be missed. Diclofenac and slow-release potassium tablets may have played an aetiological role in the formation of the webs in this patient.

*Keywords*

duodenal webs, NSAID, gastric outlet obstruction

## Introduction

Obstruction to the normal passage of gastric contents into the small bowel can occur in all age groups. The obstructing lesion usually differs with the patient's age: duodenal webs, annular pancreas and hypertrophic pyloric stenosis are the usual causes in infancy [1], whilst peptic ulcer disease, and gastric and pancreatic carcinoma are the usual causes in adult patients [2].

## Case report

An 82-year-old woman was admitted with vomiting of partially digested food after every meal for 6 weeks associated with a 4-kg weight loss. She had been taking Arthrotec (diclofenac sodium 75 mg and misoprostol 200 μg) bd for the past 3 years as therapy for debilitating osteoarthritis complicated by spinal stenosis; she had previously been on indomethacin. The patient also suffered from congestive heart failure for which she was taking frusemide 40 mg daily and Slow K (potassium chloride) 1200 mg tds. Clinical examination revealed signs of recent weight loss and dehydration. There was slight tenderness in the epigastrium and a succussion splash. In addition, there were neurological signs consistent with a lumbosacral radiculopathy secondary to spinal stenosis. Haemoglobin was 11.6 g/dl (1.80 mmol/L), and electrolyte levels were consistent with dehydration and metabolic alkalosis.

The metabolic abnormalities were corrected with intravenous fluids, and the stomach was decompressed using a wide-bore nasogastric tube. Upper abdominal CT revealed two extremely short segment strictures within the duodenum, one at the junction of the first and second parts, and another at the junction of the second and third parts (Figure 1). There was no evidence of an annular pancreas, or of a pancreatic or gastric lesion. The CT findings suggested incomplete duodenal webs, and this diagnosis was confirmed at endoscopy, where the webs appeared as thin translucent membranes. A 14-mm balloon was used to dilate the webs and allow passage of the endoscope into the third part of the duodenum. After the endoscopic procedure, the patient was able to return to a normal diet without any further vomiting. She remains asymptomatic and is being followed up endoscopically for possible redilatation of the duodenal webs.

## Discussion

Duodenal webs usually present at birth. They result from failure of the duodenum to re-canalise between the 6th and 8th weeks of gestation [1]. It is exceedingly rare for such an abnormality to present outside infancy, but when it does it is generally considered to be an acquired

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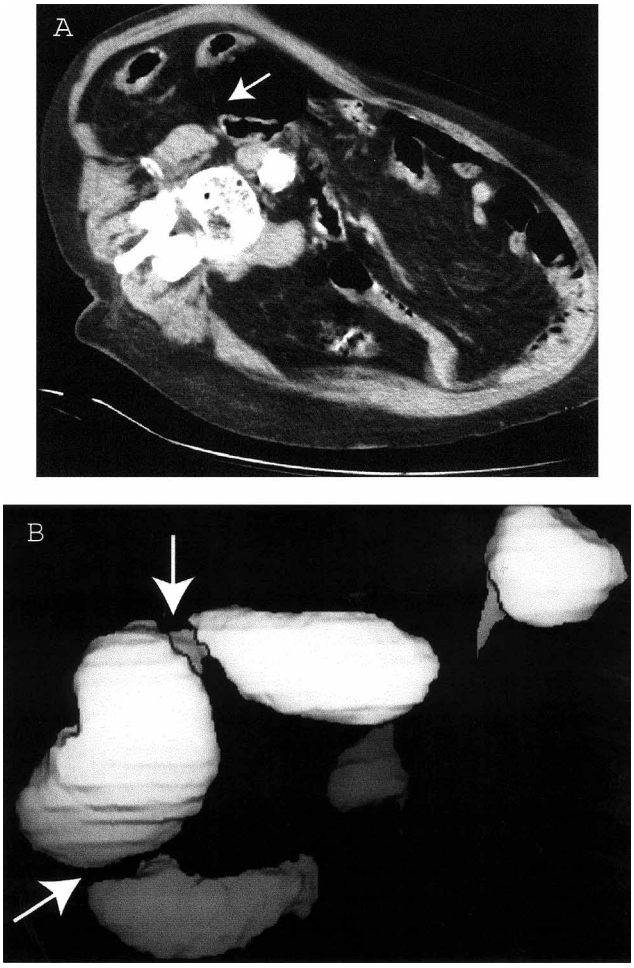


**Figure 1.** *(A) Axial CT scan demonstrating the duodenal web (arrowed) at the junction of the first and second parts of the duodenum. (B) 3-D reconstruction of the duodenum using spiral CT demonstrating strictures (arrowed) resulting from the duodenal webs at the junction of the first and second and the junction of the second and third parts of the duodenum.*

condition [3]. The patient described here developed symptoms only in her ninth decade. The likeliest cause for duodenal webs in adulthood is chronic use of non-steroidal anti-inflammatory drugs (NSAIDs) [3, 4]. These drugs cause an inflammatory tissue reaction, submucosal fibrosis and finally diaphragm-like strictures [4]. This was the most likely pathology in our case, as the patient was previously asymptomatic and congenital webs would have presented much earlier. It is also probable that potassium supplements contributed to the development of her duodenal webs. Although no previous association between duodenal webs and potassium supplements has been reported in the literature, it is known that potassium preparations can cause small bowel strictures [5], which may have a similar aetiology.

Adults who develop a duodenal web usually present with gastric outlet obstruction that mimics pyloric stenosis secondary to carcinoma or peptic ulcer disease. Diagnosis is made using contrast radiography or endoscopy, the latter being much more sensitive [6]. A duodenal web may be missed, however, if one fails to visualise the second and third parts of the duodenum [7]. Peptic ulcer disease frequently co-exists with a duodenal web, but the ulcer generally resolves once the web is treated [8]. In adults duodenal webs tend to be double [7, 9], as in this case.

Management aims at relieving the obstruction usually by surgical excision via a duodenotomy [6, 7]. Gastrojejunostomy alone may be complicated by a duodenal stump syndrome [7, 10]. Since our patient was not considered fit enough for a laparotomy and the webs did not completely obstruct the duodenum, they were dilated endoscopically. This proved to be a simple and effective method of dealing with the patient's symptoms, although regular re-dilatations are likely to be required in the future.

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